

# RMarkdown Tutorial

Alina Zeng

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## Learning the commands in RMarkdown

*Hello darkness my old friend.*

### What else is there?

- yay

1. Hello

this is `setwd()` and you need to do it every time you start a new R project.

**This thingy below is called a code chunk.**

Loading packages

```
library(dplyr)
```

Loading biodiversity data *This data is a publicly available dataset of occurrence records for many animal, plant, and fungi species, for 2000-2016 from the NBN Gateway*

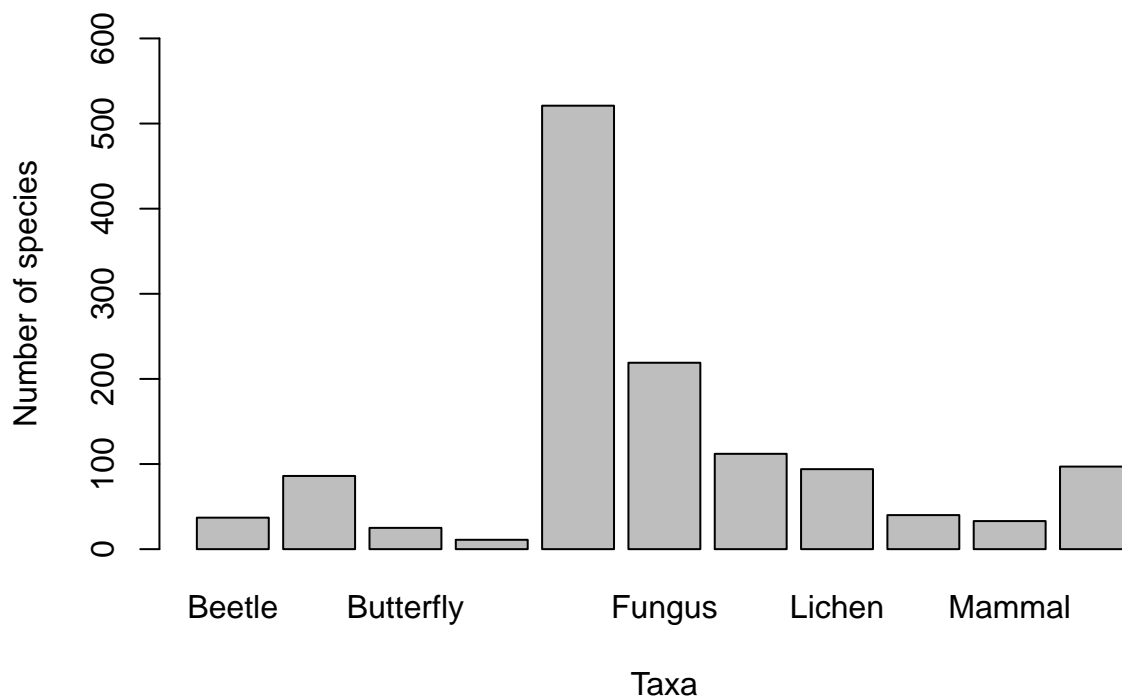
```
setwd("C:/Users/alina/Documents/git/Git_Tutorials/CC_course_stream2/05_Markdown")
edidiv <- read.csv("edidiv.csv")
```

Constructing a **table of species richness** in each taxonomic group

```
richness <-
  edidiv %>%
    group_by(taxonGroup) %>%
    summarise(Species_richness = n_distinct(taxonName))
```

Creating a barplot of species richness in each taxonomic group

```
barplot(richness$Species_richness,
        names.arg = richness$taxonGroup,
        xlab = "Taxa", ylab = "Number of species",
        ylim = c(0,600)
        )
```



Determining what the most common species is in each taxonomic group

```
max_abund <-
  edidiv %>%
    group_by(taxonGroup) %>%
    summarise(taxonName = names(which.max(table(taxonName))))
```

Joining the two data frames together, using "taxonGroup" as the reference

```
richness_abund <- inner_join(richness, max_abund, by = "taxonGroup")
```

Renaming the headers of the tables, and viewing the data frame

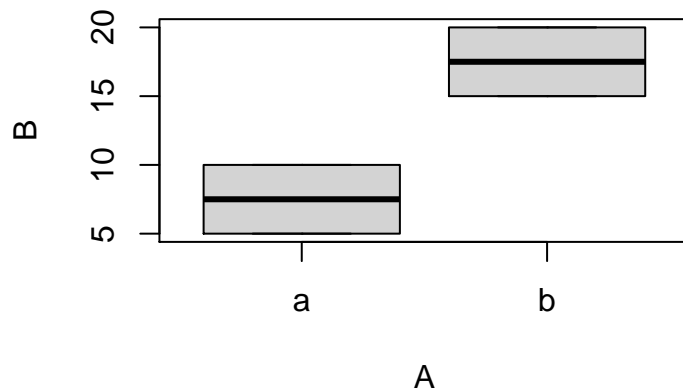
```
richness_abund <- rename(richness_abund, Most_abundant = taxonName, Taxon = taxonGroup)
```

## including figures

```
A <- c("a", "a", "b", "b")
B <- c(5, 10, 15, 20)
dataframe <- data.frame(A, B)
print(dataframe)
```

```
##   A B
## 1 a 5
## 2 a 10
## 3 b 15
## 4 b 20
```

```
boxplot(B~A,data=dataframe)
```



```
dataframe
```

```
##   A B
## 1 a 5
## 2 a 10
## 3 b 15
## 4 b 20
```

```
library(knitr)
kable(dataframe, digits = 2)
```

A	B
a	5
a	10
b	15
b	20

```
library(pander)
plant <- c("a", "b", "c")
temperature <- c(20, 20, 20)
growth <- c(0.65, 0.95, 0.15)
dataframe <- data.frame(plant, temperature, growth)
emphasize.italics.cols(3) # Make the 3rd column italics
```

```
pander(dataframe) # Create the table
```

plant	temperature	growth
a	20	0.65
b	20	0.95
c	20	0.15

## Manually creating table using markdown syntax

Plant	Temp.	Growth
A	20	0.65
B	20	0.95
C	20	0.15

```
library(broom)
library(pander)
A <- c(20, 15, 10)
B <- c(1, 2, 3)

lm_test <- lm(A ~ B) # Creating linear model

table_obj <- tidy(lm_test) # Using tidy() to create a new R object called table

pander(table_obj, digits = 3) # Using pander() to view the created table, with 3 sig figs
```

term	estimate	std.error	statistic	p.value
(Intercept)	25	4.07e-15	6.14e+15	1.04e-16
B	-5	1.88e-15	-2.65e+15	2.4e-16

## R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

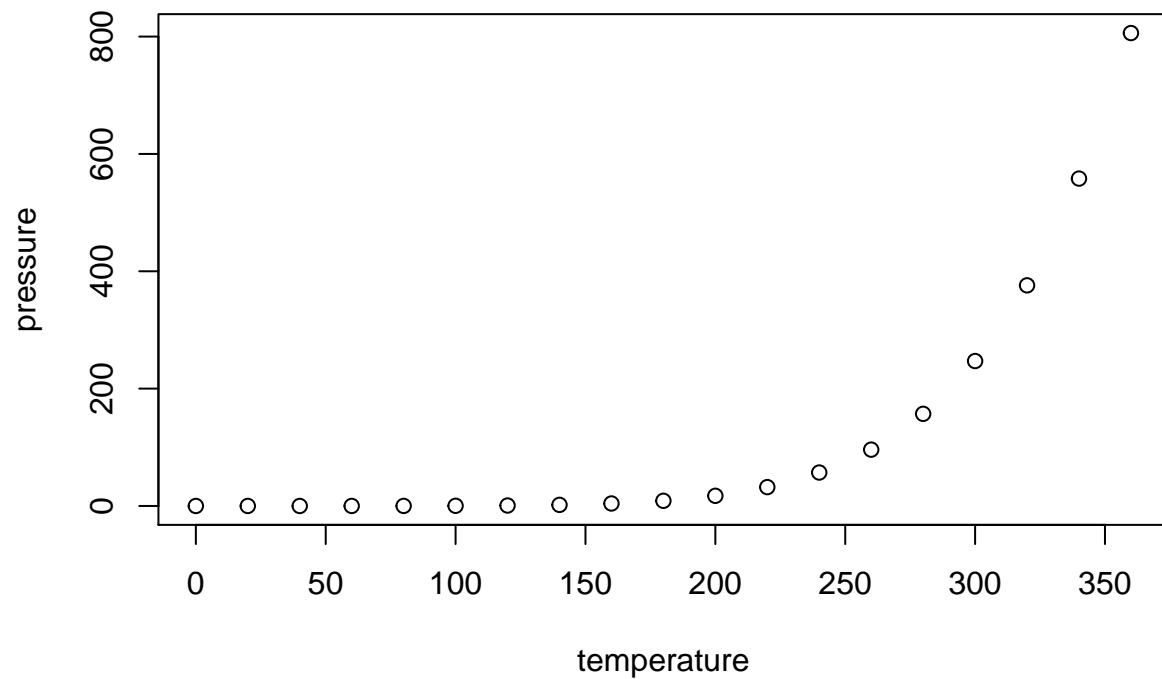
```
summary(cars)
```

```
##      speed      dist
##  Min.   : 4.0    Min.   :  2.00
##  1st Qu.:12.0    1st Qu.: 26.00
##  Median :15.0    Median : 36.00
##  Mean   :15.4    Mean    : 42.98
```

```
## 3rd Qu.:19.0    3rd Qu.: 56.00  
## Max.    :25.0    Max.    :120.00
```

## Including Plots

You can also embed plots, for example:



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.